

OCC Quarterly Report on Year 2000 Activities
Submitted to Congress May 14, 1998

AGENCY PROGRESS

- 1. Consistent with OMB reporting requirements for the Year 2000 status of federal agencies (as found in OMB Memorandum M-98-02 and -07), please provide a status report of internal agency efforts to address the Year 2000 problem.**

The OCC is actively addressing the conversion of our internal systems, and we are very confident that we will reach all established goals in this regard. OCC managers in charge of internal Year 2000 efforts report weekly to the OCC's Year 2000 Oversight Committee to discuss progress and pending issues.

Cost. Through the first quarter of 1998, the OCC has expended \$3,761,000 on Year 2000 renovation, and we expect to spend an additional \$7,043,000 in order to complete this effort (see detailed table below), for a total expected outlay of \$10,804,000. The expenditures do not include overhead expenses.

OCC Year 2000 Expenses		
Year	Y2K Renovation Expenditures	Estimated Cost to Completion
1996	\$ 15,000	--
1997	584,000	--
1998 - 1st quarter	3,162,000	--
1998 - last 3 quarters	--	\$4,612,000
1999	--	2,147,000
2000	--	284,000
Total	\$3,761,000	\$7,043,000

Mission-Critical IT Systems. The OCC identified thirteen mission-critical information technology (IT) systems that support the key business functions of the agency.¹ One of the thirteen will be retired (Trust Billing); the remaining twelve mission-critical IT systems will be repaired and have been assessed.

¹ The mission-critical systems are Consolidated Application System, Time and Travel Reporting System, Time Entry, General Financial System, Salary Allocation, Bank Assessment, Lockbox, Security Authorization, Budget Code Restructure, Corporate Activities Information System, Supervisory Monitoring System, National Bank Surveillance Video Display System, and Trust Billing.

As of April 26, 1998, seven of the mission-critical IT systems have been renovated and validated as Year 2000 compliant, and we have implemented these renovated systems. The remaining five are currently being renovated, and will be repaired, validated, and implemented by July 31, 1998. While we are exploring the replacement of three of these mission-critical IT systems by year-end 1999, as a contingency and to ensure operational continuity, these three systems will be renovated, validated and implemented as Year 2000 compliant by July 31, 1998.

The OCC's mission-critical IT systems exchange data with four external parties: the Federal Reserve (FRB), the Federal Deposit Insurance Corporation (FDIC), the National Finance Center (NFC), and the First National Bank of Chicago (FNBC). The OCC established bridge programs for data exchanges with the NFC and the FNBC. Data exchanges with the FDIC and the FRB will be Year 2000 compliant by July 31, 1998, or bridge programs will be used to ensure their continued proper execution.

Non-IT Mission-Critical Systems. The OCC is completing the assessment of non-IT systems, which will be finalized by July 30, 1998. We are running the assessment and renovation phases for these systems concurrently. The assessment, renovation, validation and implementation will be completed by October 30, 1998.

Non-Mission-Critical IT Systems. We also identified 276 non-mission-critical IT systems, of which 42 require renovation. As of April 26, 1998, six of these 42 systems have been renovated, validated, and implemented as compliant, three have been renovated, and three others have been retired and will not be replaced. The remaining 30 non-mission critical IT systems requiring renovation will be renovated, validated, and implemented as compliant by July 31, 1998. The 234 non-mission critical IT systems not requiring renovation are believed to be already Year 2000 compliant, and will be validated to ensure compliance by September 30, 1998.

- 2. Please report on the status of agency testing and contingency planning, including when the agency plans to have a formal, detailed Year 2000 contingency plan for agency systems in place. Please include agency contingency plans for any systems with early fail dates and for protecting agency systems against data corruption from outside partners. With respect to testing, please include plans for testing and independently verifying compliance of repaired, replaced or new systems.**

The OCC follows the Year 2000 guidelines detailed in the United States General Accounting Office publication "Year 2000 Computing Crisis: An Assessment Guide". We have completed the Awareness and Assessment Phases and are now focusing on renovation, validation, and implementation. As part of the validation phase, the OCC established a testing strategy including schedules, test tools and procedures, and a test facility. To further ensure that OCC systems are thoroughly and accurately renovated, the OCC developed an Independent Validation and Verification program which requires additional independent testing to verify compliance. In addition, the OCC established a formal certification process to follow independent validation and verification. Certification is the final step in assuring OCC management that OCC systems and applications are Year 2000 compliant.

Testing. The OCC developed Year 2000 testing practice guidelines for mainframe, client server, and PC applications. Each OCC system not scheduled for retirement or replacement must be tested to ensure Year 2000 compliance. All critical applications must meet Year 2000 compliance testing criteria at one of two predetermined compliance levels: total compliance or functional compliance. Year 2000 test plans are customized for each application or group of applications. Date input, output, and database or file storage integrity are verified as part of the testing practice guidelines. To be designated as Year 2000 compliant, a system must flawlessly process date and date-related data forward and backward across the Year 2000 boundary, and this result must be independently validated and verified. To facilitate testing procedures, the OCC created mainframe and client server test beds for application and implementation group testing. In addition, the OCC will use independent testing specialists who will assist application testers during the testing process. They will repeat the tests under a variety of conditions and document their findings.

Independent Validation and Verification. This program will consist of a three-step process. First, OCC's application systems, both critical and noncritical, scheduled to be renovated will be reviewed and assessed by a team including contractor and OCC programmers. This renovation team will first modify any system components necessary and then test the system for Year 2000 compliance. Second, after their work is complete, a separate test team of contractors and OCC personnel independently validate and verify the systems' Year 2000 compliance. As a third check, an implementation team consisting of business area representatives will validate and confirm the operation of the system at the end of the implementation phase.

Certification. The final phase of OCC's Year 2000 compliance process is certification. Each phase of the Year 2000 compliance process creates documentation and an audit trail of compliancy activities. The OCC's certification process entails reviewing this documentation,

conducting spot checks of systems to verify reported results, and interviewing participants to ensure process compliance. At the conclusion of this review, and based upon positive affirmation of Year 2000 compliance, an OCC Year 2000 Certification Form will be prepared and approved by both the system administrator and a representative of the Year 2000 Oversight Committee. This process establishes responsibility, accountability, and assurance that all planned compliance steps have been completed.

Contingency Planning. The OCC has developed contingency plans for all mission-critical as well as non-mission-critical systems and applications. Should renovation, validation, and implementation plans not proceed as planned, the OCC's contingency plans will help mitigate risks from a disruption of business functions. The contingency plans will also ensure continued business activity by the OCC and help reduce any negative impact on day-to-day operations.

The contingency plans for mission-critical systems include the following elements: a business impact assessment, a plan development outline, triggers for activating the contingency plans, and development and testing of contingency plans. Contingency plans for non-mission-critical systems follow the same methodology. However, the depth of the plans are dependent on the risks identified for each system.

The OCC also developed contingency plans for internal and external data exchange partners. In doing so, we spent considerable time evaluating our interfaces with other agencies, vendors, and customers. If the interface is internal, it will be renovated with a contingency plan developed to take into account the level of risk and dependence for the OCC partner(s). If the interface is external, the OCC will meet with the partners and adopt the most appropriate contingency plan.

INDUSTRY PROGRESS

- 1. OMB recently accelerated the government-wide timetable for completing year 2000 renovation with the following targets: September 30, 1998, for completion of renovation; January 1999 for completion of testing and validation, and March 1999, for implementation. Please describe the comparable timetable which the agency has laid out for financial institutions and, if necessary, how and why those deadlines differ from GAO and OMB timetables. Also, please describe the specific criteria used by examiners (e.g. whether an institution has contingency plans in place, etc.) to determine if an institution may be rated as “satisfactory” or not.**

Timetable. The OCC and the other Federal Financial Institution Examination Council (FFIEC) agencies have established timetables for completion of all phases of the Year 2000 project plan. Our target benchmarks, which we describe in detail below, differ in several ways from the timetables established by OMB and GAO. The FFIEC timetable provides financial institutions with additional time to renovate, test, and implement system changes. These differences reflect a view that, as a practical matter, many customers of financial institutions will not be ready to complete testing by the dates established by OMB and GAO.

In our discussions with other bank regulators, government agencies, foreign supervisors, service providers, software vendors, bank trade associations and banks, they indicate that domestic and international customers of financial institutions are behind the GAO’s remediation schedule and many are not expected to be ready to test connections with financial institutions until the first or second quarter of 1999. We believe if banks meet the schedule the FFIEC has set, they can successfully make all mission-critical systems compliant by the Year 2000, or if they fail to do so, they will have time to implement disaster recovery or other contingency plans.

At the same time the OCC is encouraging banks to renovate, test and implement Year 2000 ready systems according to the FFIEC schedule, the OCC has an aggressive examination strategy that will provide regular updates on the status of individual banks, federal branches and agencies and independent data centers.

The following is a discussion of differences in FFIEC, OMB and GAO timetables for the renovation, testing/validation, and implementation phases.

Renovation. OMB and GAO recommend that government agencies complete the renovation phase by September and August 1998, respectively. The FFIEC’s timetable recommends that financial institutions complete the renovation phase early in the fourth quarter of 1998.

Testing/Validation. OMB recommends government agencies complete the validation phase by January 1999. GAO does not specify when the validation phase should be complete. The FFIEC’s April 10, 1998, guidance on testing outlined the following dates for completion of the validation phase.

- By June 30, 1998, institutions should complete the development of their written testing strategies and plans.
- By September 1, 1998, institutions processing in-house and service providers should have commenced testing of internal mission-critical systems, including those programmed in-house and those purchased from software vendors.
- By December 31, 1998, testing of internal mission-critical systems should be substantially complete. Service providers should be ready to test with customers.
- By March 31, 1999, testing by institutions relying on service providers for mission-critical systems should be substantially complete. External testing with other material third parties (customers, other financial institutions, business partners, payment system providers, etc.) should have begun.
- By June 30, 1999, testing of mission-critical systems should be complete and implementation should be substantially complete.

Implementation. OMB and GAO recommend that government agencies fully implement Year 2000 ready systems by March 1999 and December 1999, respectively. The FFIEC recommends that financial institutions be substantially done with implementation by June 30, 1999.

Summary evaluations. At the conclusion of each quarterly supervisory review, examiners will evaluate the effectiveness of the institution's Year 2000 program using the definitions outlined below. In evaluating an institution's Year 2000 efforts, examiners will assess the adequacy of its Year 2000 program, the progress the institution has made in implementing its project plan, and its ability to meet internal and FFIEC deadlines. These definitions will be uniformly applied to all institutions the OCC supervises.

Satisfactory

Year 2000 efforts of financial institutions and independent data centers are considered "satisfactory" if they exhibit acceptable performance in all key phases of the Year 2000 project management process as set forth in the May 5, 1997, FFIEC Interagency Statement on the Year 2000 and subsequent guidance documents. Performance is satisfactory when: project weaknesses are minor in nature and can be readily corrected within the existing project management framework; an institution's remediation progress to date meets or nearly meets expectations laid out in its Year 2000 project plan; and senior management and the board recognize and understand Year 2000 risk, are active in overseeing institutional corrective efforts, and have ensured that the necessary resources are available to address this risk area.

Banks – Banks that receive a "satisfactory" rating demonstrate the following characteristics.

- In banks that develop their own core (mission-critical) applications, comprehensive project plans and budgets have been adopted addressing significant areas of concern. Project plans include reasonable time frames with achievable objectives.
- In banks using suppliers of data processing products and services, an effective due diligence process manages these key relationships. The due diligence process addresses each of the following five elements: 1) an analysis of the supplier's ability to support a Year 2000 corrective program; 2) a review of contract provisions; 3) contingency plans, with specific trigger dates, in the event a vendor is unable to deliver products or services that are Year 2000 ready; 4) ongoing dialogue with vendors, including a review of the vendor's Year 2000 remediation progress; and 5) development of a program to test each vendor's renovated products or services within the institution's unique operating environment.
- Bank investment and lending practices reflect the credit impact that the Year 2000 may have on large borrowers or bond issuers, including those practices outlined in the Interagency Statement or subsequent FFIEC guidance.

Independent Data Centers – A satisfactory evaluation is appropriate if the data center demonstrates the characteristics identified above, is actively communicating with client banks, and makes its Year 2000 project objectives and benchmarks available to them.

Needs Improvement

The Year 2000 efforts of financial institutions and independent data centers are evaluated as “needs improvement” if they exhibit less than satisfactory performance in any of the key phases of the Year 2000 project management processes outlined below. Project weaknesses are evident even if deficiencies are correctable within the financial institution's existing Year 2000 project management framework. The institution's remediation progress to date is behind the schedule laid out in its Year 2000 project plan. Senior management or the board is not fully aware of the status of Year 2000 corrective efforts, may not have committed sufficient financial or human resources to address this risk, or may not fully understand Year 2000 implications.

Banks – Banks that receive a “needs improvement” rating demonstrate the following characteristics.

- In banks that develop their own core (mission-critical) applications, project plans and budgets may have been adopted but may be lacking in significant areas or are informal. Project plans may not provide sufficient scheduling flexibility to ensure remediation of all affected mission-critical systems and applications, should unexpected problems be encountered.

- In banks using third-party suppliers of data processing products and services, a due diligence process, though in place, lacks one or more of the five key elements outlined above.
- Bank investment and lending practices address the credit implications the Year 2000 may have on large borrowers or bond issuers, but the practices do not include all process elements outlined in the Interagency Statement or subsequent FFIEC guidance.

Independent Data Centers – Data centers evaluated as “needs improvement” have the weaknesses identified above. This evaluation also may be appropriate if vendor communication with client banks is sporadic or if project objectives and benchmarks are difficult to obtain.

Unsatisfactory - Year 2000 efforts of financial institutions and data centers are “unsatisfactory” if they exhibit poor performance in any of the key phases of the Year 2000 project management process outlined below. Project weaknesses are serious in nature and are not easily corrected within the existing project management framework. The institution’s remediation progress to date is seriously behind the schedule laid out in its Year 2000 project plan. Senior management and the board do not understand or recognize the impact that the Year 2000 will have on the institution. Management or the board commitment is limited or their oversight activities are not evident.

Banks – Banks that receive an “unsatisfactory” rating demonstrate the following characteristics.

- In banks that develop their own core (mission-critical) applications, project plans and budgets have not been adopted or are seriously inadequate. Project plans lack time frames or the plans adopted are unrealistic or will not remediate mission-critical applications/systems within the FFIEC deadlines.
- In banks using third-party suppliers of data processing products and services, no due diligence process is in place, or the process is flawed due to a lack of several key elements.
- Bank investment and lending practices do not address the credit impact the Year 2000 may have on large borrowers or bond issuers, or they lack several of the process elements outlined in the Interagency Statement or subsequent FFIEC guidance.

Independent Data Centers – Data centers evaluated as “unsatisfactory” exhibit the weaknesses identified above. This evaluation may also be appropriate if a data center’s communication with client banks is unclear and inaccurate, or if project objectives and benchmarks are not available.

2. **Please provide an estimate, current as of March 31, 1998, of the Year 2000 status of all financial institutions under the agency's jurisdiction, based on the timetable, remediation phases, and rating criteria discussed in Question 1. (In cases where on-site Year 2000 examinations are not recent, please project the current status of such institutions.) Please provide the numbers of institutions rated satisfactory, needs improvement, and unsatisfactory. For categories of institutions rated as needs improvement or unsatisfactory, please describe the nature of the most common Year 2000 concerns, enforcement or other actions taken by the agency to address such concerns, and a breakdown by asset size.**

Industry status. The OCC is pursuing a Year 2000 supervisory strategy to develop guidance in cooperation with the other FFIEC agencies; examine national banks, federal branches and agencies, and service providers and software vendors; and promptly communicate our supervisory concerns to the industry. We will complete onsite examinations of all national banks by June 30, 1998, monitor Year 2000 remediation progress quarterly, and assign a Year 2000 summary rating to each institution. As of May 4, 1998, the OCC has completed (or is in the process of completing) Year 2000 readiness examinations for 84 percent of national banks and federal branches and agencies and 67 percent of independent data centers and the largest services providers that we supervise.

Table 2.1 summarizes the current distribution of Year 2000 summary ratings by asset size. As of March 31, 1998, 87 percent of national banks, federal branches and agencies, and independent data centers received satisfactory Year 2000 ratings. These summary ratings will likely change when we examine and monitor institutions as they complete the renovation, testing, and implementation phases of their Year 2000 project plans.

Table 2.1
Year 2000 Summary Evaluations by Asset Size
March 31, 1998

<i>Evaluation</i>	<i><\$100MM</i>	<i>\$100MM to \$500MM</i>	<i>\$500MM to \$1B</i>	<i>>\$1B</i>	<i>Percent</i>
<i>Satisfactory</i>	86%	88%	88%	82%*	87%
<i>Needs Improvement</i>	13%	12%	12%	18%	13%
<i>Unsatisfactory</i>	1%	< 1%	0%	0%	<1%
<i>Number of OCC-Supervised Institutions Evaluated**</i>	1,617	875	122	182	

* Many large banks develop their own applications and have more aggressive timetables than those established by the FFIEC. The summary ratings reflect the difficulties some are having in meeting their own aggressive internal target dates.

** Includes national banks, federal branches and agencies, and independent data centers.

Source: OCC Year 2000 Database

As part of its supervisory reporting system, the OCC has implemented a tracking system to record and monitor the progress of individual institutions as they advance through the phases of the year 2000 project plan. Table 2.2 summarizes the status of Year 2000 remediation efforts of mission-critical applications. The tables shows the current phase of completion for systems developed in-house by national banks and systems developed by outside data centers. The national banks doing their own remediation are typically large in size and have complex operations. As of March 31, 1998, over half of the mission-critical applications used by national banks -- whether developed by the bank or by a data center -- are in the renovation stage. Approximately 40 percent of mission-critical applications are being validated or implemented.

Table 2.2
Status of Year 2000 Remediation Efforts for
Mission-Critical Applications
as of March 31, 1998

<i>Phase</i>	<i>Bank Developed Mission Critical Applications (Percent)</i>	<i>Data Center Developed Mission Critical Applications (Percent)</i>	<i>Total (Percent)</i>
<i>Awareness/Assessment</i>	7.8%	0.5%	6.8%
<i>Renovation</i>	52.3%	56.0%	52.8%
<i>Validation</i>	13.5%	15.5%	13.8%
<i>Implementation</i>	26.4%	28.0%	26.6%
<i>Total</i>	100.0%	100%	100%

Source: OCC Year 2000 Database, based on the number of mission-critical systems reported by OCC-supervised institutions.

For banks that rely on third-party service providers or software vendors, OCC examiners are asked to determine if national banks have started and completed the renovation, validation, and implementation phases. As summarized in Table 2.3, approximately 35 percent of banks that rely on service providers and software vendors have completed renovation and are beginning the validation and implementation phases. Approximately 3 percent have finished the implementation phase.

Table 2.3
Status of Year 2000 Remediation Efforts
for National Banks that Rely on
Service Providers and Software Vendors
for Mission-Critical Applications
as of March 31, 1998

<i>Phase</i>	<i>Percent of Institutions Started Phase</i>	<i>Percent of Institutions Completed Phase</i>
<i>Renovation</i>	<i>100.0%</i>	<i>16.1%</i>
<i>Validation</i>	<i>69.4%</i>	<i>19.0%</i>
<i>Implementation</i>	<i>41.1%</i>	<i>3.2%</i>
<i>Total Institutions</i>	<i>2,379</i>	<i>NA</i>

Source: OCC Year 2000 Database

Common deficiencies. The OCC's assessment of the status of institutions rated either "needs improvement" or "unsatisfactory" identified some common deficiencies among these institutions. For example, these institutions--whether large banks, community banks, or federal branches or agencies--generally lacked appropriate contingency plans and due diligence processes, and needed to establish plans for coordinating their testing efforts. The OCC is actively working with banks to ensure that they pursue adequate corrective action. The principal concerns are summarized below.

Large Banks:

- Lack of contingency plans, including lack of plans for both internal systems and for products and services provided by service providers and software vendors.
- Lack of due diligence processes to assess the impact of Year 2000 on corporate borrowers and counterparties.
- Insufficient plans for coordination of testing with counterparties.
- Inadequate or insufficient Year 2000 project MIS and/or Board reporting.
- Inadequate audit involvement.

Community Banks:

- Lack of contingency plans, including no or inadequate target dates for completion of contingency plans for products and services provided by service providers and software vendors, and no or inadequate business resumption contingency planning.
- Lack of due diligence processes to assess the impact of Year 2000 on corporate borrowers and counterparties.
- Insufficient plans for coordination of testing with counterparties.
- Inadequate project plan with no or inadequate deadlines, contingency planning, accountability, or budgets.
- Inadequate audit involvement.
- Inadequate vendor management.

Federal Branches and Agencies:

- Lack of contingency plans, including no or inadequate target dates for completion of contingency plans for products and services provided by service providers and software vendors, and no or inadequate business resumption contingency planning
- .
- Lack of due diligence processes to assess the impact of Year 2000 on corporate borrowers and counterparties.
- Insufficient plans for coordination of testing with counterparties.

Enforcement. The OCC will take enforcement action as needed to ensure that national banks that are falling behind schedule take appropriate and aggressive corrective action. We recently issued enforcement guidelines for all examiners and issued procedures that detail the choice of supervisory response. As outlined in "Year 2000 Enforcement Actions" (PPM 5310-9), the choice of supervisory response is determined largely by (1) the institution's Year 2000 summary evaluation; (2) progress made in complying with any previously issued supervisory directive or other informal or formal enforcement action; (3) the cooperation, responsiveness, and capability of the institution's management and board of directors; and (4) the time remaining prior to the Year 2000.

For institutions receiving a "needs improvement" evaluation, a Supervisory Directive will be sent to senior bank management detailing the specific Year 2000 deficiencies and setting forth specific measures to rectify the problem within specific time frames. The OCC will issue a Memorandum of Understanding (MOU) or take more aggressive enforcement action against institutions rated "unsatisfactory." The OCC will initiate formal enforcement action whenever informal measures are inadequate or ineffective in securing prompt remediation of the Year 2000-related problems.

Through May 4, 1998, we have issued 187 Supervisory Directives, and have an additional 38 in process. We anticipate that, within the next quarter, the number of Supervisory Directives will increase and match the number of banks rated "needs improvement" as the enforcement policy is fully implemented. Three MOUs and two formal enforcement safety and soundness actions have been approved and will be presented to the affected bank board of directors shortly.

- 3. GAO has expressed concern about the agencies' ability to meet Year 2000 examination needs with current levels of specialized examiners. Please provide: (1) total number of agency examiners, both general and IT specialists, as well as contracted IT specialists; (2) number of general examiners receiving Year 2000 training and conducting Year 2000 exams; (3) average number of institutions assigned to each examiner (or contractor); (4) criteria by which the agency decides which type of examiner to use, particularly with respect to institutions not rated satisfactory; and (5) any plans the agency has for changing its examination staffing or procedures.**

Examiner Expertise. As of April 11, 1998, the OCC has a total of 1,783 examiners, many of whom are members of specialist programs or "cadres". In particular, 102 examiners -- or approximately six percent of all examiners -- are part of the Bank Information System (BIS) cadre. The BIS cadre provides a pool of experience that safety and soundness examiners can tap when Year 2000 issues arise. Of these 106 examiners, 78 are full time BIS examiners.

BIS examiners focus on technology and information processing issues in national banks, service providers, and software vendors. BIS examiners routinely work with examiners from the FDIC, Federal Reserve, and OTS on joint examinations of service providers and software vendors.

Consultants. The OCC is committed to using all available expertise in addressing Year 2000 supervisory concerns. Examples of some consulting services that we have retained and a brief description of the services that they perform follow.

- The OCC has retained GartnerGroup to assist in the evaluation of the data collection process to ensure that we are collecting the information necessary to stay abreast of national banks' remediation efforts and flag problems. We have asked GartnerGroup to review our tracking system to ensure that the information accurately reflects the progress made by national banks, their data service providers, and software vendors. This information will help us determine whether or not the institutions are addressing their remediation efforts appropriately.
- Coopers & Lybrand has been retained to assist in the development and delivery of technical Year 2000 training for all examiners during 1998.
- The OCC is creating a rapid response team comprised of OCC examiners, IT experts from our Information Technology Services division, and Year 2000 experts provided by outside consulting firms. This rapid response team will assist the agency by focusing on complex or difficult Year 2000 related problems in OCC-supervised institutions.

Year 2000 Training. Approximately 1,000 examiners received basic Year 2000 training in 1997. The training provided an overview of the Year 2000 problem and the OCC's supervisory strategy.

Examiners received training at various District Training Conferences. All the Bank Information Systems (BIS) specialists received more extensive formal training (4 days) during FFIEC-sponsored seminars.

By July 1, 1998, over 600 examiners will receive 1.5 days of more detailed Year 2000 training. OCC experts, in addition to technology experts under contract from Coopers and Lybrand, will conduct the training. To date, approximately 400 have received that supplementary training. All other field examiners will receive approximately 4 hours of training in their field offices or large bank locations. In addition, we will provide advanced training focused on testing and contingency planning to all examiners who will be conducting Year 2000 examinations in 1998. This training is being developed by the FFIEC.

Criteria for Assigning Examiners. The agency assigns examiners to the institutions we supervise based on the geographic location, size of the institution, nature of the institution's operations, and the risk that the institution poses to the financial system. The OCC has approximately 600 examiners assigned to conduct Year 2000 examinations. The qualifications of these examiners is thoroughly evaluated to ensure that they meet the supervisory needs demanded by the complexity of the institution. For instance, Bank Information Systems (BIS) examiners typically are assigned responsibility for conducting BIS and Year 2000 examinations of service providers and banks that do extensive application development in-house. Smaller community banks that rely on service providers or software vendors are examined by generalist safety and soundness examiners who have received Year 2000 training.

We expect all examiners who are responsible for specific institutions or responsible for a portfolio of institutions to monitor Year 2000 progress of their respective institutions. We expect all examiners (regardless of subject matter expertise) to work cooperatively and draw conclusions regarding each institution's level of preparedness, just as we expect financial institutions to make the Year 2000 an enterprise-wide, well-coordinated initiative.

Because the size of an institution and the complexity of its data processing operations drive the assignment of examiner expertise, OCC generally does not reassign examiners based on the Year 2000 rating.

Focus of Exams in 1998 and 1999. The OCC is currently evaluating plans to allocate examination resources for Year 2000 supervisory activities for the next two years. The focus of examinations will shift towards assessing testing and contingency planning. As part of the quarterly review of each institution, the OCC will ensure that adequate resources will be available to supervise banks that encounter problems in implementing Year 2000 ready systems.

4. Please provide the total number of service providers to financial institutions which are subject to the agency's jurisdiction, the number already examined, those still to be examined, and those not expected to be examined. For those already examined, please summarize the results (e.g. the number rated satisfactory, needs improvement, and unsatisfactory, based on such criteria as meeting target dates, etc.) and any subsequent actions required for those not rated satisfactory. Please provide, where appropriate, comparable results from voluntary examinations of software vendors.

Examinations: In recognition of the important role third-party vendors play in processing data and developing software, the OCC and the other FFIEC agencies examine the largest service providers under the Multi-Regional Data Processing Servicers (MDPS) program and the largest software vendors under the Shared Application Software Review (SASR) program. There are 16 data centers and 12 bank software publishing companies that are in the MDPS and SASR programs, respectively. The OCC is the lead agency for 5 MDPS companies and 4 SASR companies. MDPS and SASR companies are generally national in scope. The OCC also supervises and examines an additional 43 independent data centers (IDCs) used by national banks, which are regional in scope.

Table 4.1
Year 2000 Summary Evaluations
Service Providers and Software Vendors
March 31, 1998

<i>Evaluation</i>	<i>OCC Supervised Independent Data Centers</i>	<i>OCC Supervised MDPS</i>	<i>OCC Supervised SASR</i>
<i>Satisfactory</i>	34	5	4
<i>Needs Improvement</i>	2	0	0
<i>Unsatisfactory</i>	0	0	0
<i>Total</i>	36*	5	4

* The remaining 7 independent data centers will be examined by June 30, 1998.

Source: OCC Year 2000 Database

Project Status: The OCC has completed or is nearing completion of examinations for 36 independent data centers. Of these examinations, 34 IDCs are rated satisfactory and 2 IDCs are rated needs improvement. The OCC will examine 7 additional IDCs by June 30, 1998. The OCC is the lead supervisory agency for 5 MDPS institutions and 4 SASR institutions. All of the MDPS

and SASR companies are rated satisfactory. These examinations provide ratings that are generally based on the planning and assessment stages. Ratings may change as testing progresses and the OCC obtains better information on the effectiveness of “fixes” undertaken by these companies

Common Deficiencies: The most common deficiencies for OCC supervised independent data centers that have received needs improvement ratings are:

- Lack of comprehensive contingency plans;
- Inadequate audit involvement;
- Inadequate communication and information sharing with client banks; and
- Need to devote more resources to year 2000 project and increase senior management involvement.

Enforcement: To date, the OCC, in conjunction with the FFIEC, has not taken any formal enforcement action against any independent data center. We are following the same approach to enforcement procedures with data centers as we do with financial institutions. The FFIEC Task Force on Supervision will consider taking joint regulatory action on any MDPS or Independent Data Center rated unsatisfactory. The Task Force will serve as the reviewing body for approving appropriate supervisory action.

5. **According to the March 17, 1998, FFIEC guidance, financial institutions are expected to have in place by June 30, 1998, a due diligence process to control Year 2000 risks posed by customers and to have substantially completed by September 30, 1998, an assessment of individual customer's Year 2000 preparedness. Please provide an updated assessment of the progress institutions have made in this area, how the agency will monitor compliance with the FFIEC timetable, and how Year 2000 credit risk is impacting asset quality ratings for institutions.**

Industry status. Based on Year 2000 examinations completed as of March 31, 1998, about 60 percent of institutions have formally or informally assessed the Year 2000 readiness of corporate customers. This represents an improvement over the findings of examinations completed late last Year, when fewer than 40 percent had discussed the Year 2000 issue with customers. During our initial Year 2000 assessment in August and September of 1997 only about 17 percent of banks had Year 2000 credit processes in place. Clearly, more remains to be done.

Our examinations reveal that most large banks are implementing Year 2000 credit risk management controls, although the sophistication of those controls differs widely. Many community banks have not yet put appropriate Year 2000 credit risk management controls in place despite general awareness of the potential risks. We will take follow-up supervisory action at banks that are not adequately addressing Year 2000 credit risk, and we will continue to monitor customer risk issues during our quarterly reviews.

Some banks have attempted to write Year 2000 language into loan agreements. However, customer reaction has been mixed. More sophisticated borrowers are resisting inclusion of new, Year 2000 specific terms. The credit markets are sufficiently liquid that borrowers can readily obtain funding without Year 2000 restrictions. To preserve long established relationships with important customers, many national banks have had to rely on existing covenants, rather than adding Year 2000-specific provisions.

The OCC is using the Shared National Credit (SNC) program to review and assess progress towards compliance with the FFIEC guidance for the largest and most complex credits shared by multiple financial institutions.² As part of this program, we will ask banks a series of questions which will help the OCC identify credit processes being used by large banks to assess the Year 2000 risk of their customers. The results of this effort should be available in early August.

²Currently, a Shared National Credit (SNC) is defined as any loan(s) and/or formal loan commitment(s) extended to a borrower by a supervised institution or any of its subsidiaries and affiliates which aggregates \$20 million or more and is shared by two or more institutions under a formal lending agreement, with the purchasing institutions assuming its pro rata share of the credit risk. Effective December 31, 1998, the definition will change to include only those credits that are shared by three or more institutions under a formal lending agreement, or a portion of which is sold to two or more institutions, with the purchasing institutions assuming their pro-rata share of the credit risk.

Impact on Asset-Quality Ratings. It is too early to measure how the Year 2000 is affecting asset quality ratings. Assessing the impact of the Year 2000 on the asset-quality ratings of national banks is difficult for both banks and their regulators because, unlike other credit risk factors, banks generally do not have experience assessing how the failure of a customer's computer system would affect that customer's financial position or a borrower's cash flow and its ability to service its debt. Most banks are actively discussing Year 2000 issues with their customers and many banks are using the sample questionnaires the FFIEC provided in the customer risk guidance. They are beginning to consider how to link Year 2000 risk assessments with risk ratings. Notwithstanding the difficulties, it is possible that asset quality ratings would change as more banks evaluate the potential costs of Year 2000-related problems for their customers.

6. Please outline steps the agency has taken during the last quarter to clarify Year 2000 testing requirements for financial institutions.

During the last quarter, the OCC and the other FFIEC agencies issued additional guidance to financial institutions on Year 2000 testing. We continued to monitor the activities of bank trade associations in coordinating testing, and we are developing examination procedures for testing.

The FFIEC guidance issued on April 10, 1998, identifies key milestones and testing methods for financial institutions, service providers, and software vendors to use to prepare their systems and applications for the Year 2000. The OCC and the other FFIEC agencies expect financial institutions to develop and implement a written testing strategy that includes testing of both internal and external systems (including hardware, software, and environmental systems). The plans should address, at a minimum, the following elements: testing environment³, testing methodology, testing schedules, human and financial resources, critical test dates, documentation, and contingency planning. The guidance underscores the importance of testing mission-critical systems first.

The OCC and the other FFIEC agencies are developing examination procedures to assess the adequacy of an institution's testing programs. An interagency workgroup expects to complete work on these examination procedures by June 1998. As part of our plan to monitor all OCC-supervised institutions quarterly and intensify efforts with banks that are experiencing difficulties, the OCC will focus its Year 2000 supervisory activities on systems testing later this Year and in early 1999.

The OCC and the other FFIEC agencies continue to participate in industry-sponsored conferences and seminars to emphasize the importance of testing and to answer questions regarding FFIEC expectations. In recognition of the importance of service providers and software vendors, the OCC along with the FDIC, Federal Reserve Board, and OTS will participate in three, one-day conferences on Year 2000 readiness for service providers and software vendors. The seminars will be held in June 1998. Senior FFIEC officials will give presentations on the Year 2000 examination process, distribution of examination results, vendor management, testing, and contingency planning.

As you know, the Federal Reserve will play a central role in coordinating broad system-wide Year 2000 testing for depository institutions. By the third quarter of 1998, the Federal Reserve expects to begin testing the Fedwire and other services with its counterparties. In addition, payment system providers, such as the Clearinghouse Interbank Payment System (CHIPS), have similar testing plans that will provide further opportunities to coordinate industry testing efforts.

³ Considerations for an appropriate test environment should include whether to partition current operating computers, by setting aside one or more sections to be used only for testing, or by using a separate computer system to test.

The OCC and the other FFIEC agencies are also working closely with bank trade associations regarding their efforts to conduct bank-to-bank and bank-to-counterparty testing. For example, the Bank Administration Institute (BAI) is coordinating the efforts of many large banks to test their linkages with the Federal Reserve, between individual banks, and among groups of banks. The BAI also expects many of the largest banks to participate in a coordinated effort to develop external testing approaches. In early June, these banks plan to meet to develop a list of tests essential for determining whether a bank is Year 2000 ready. In addition, the OCC and the other FFIEC agencies are monitoring the efforts of the Mortgage Bankers Association to coordinate testing of mortgage banks and mortgage-related government sponsored enterprises (GSEs).

- 7. Please provide the agency's latest assessment of the systemic risk of Year 2000 to institutions under the agency's jurisdiction and the cost - to date and estimated at completion - to the industry of addressing the Year 2000 problem. Include a current assessment of the impact of the Year 2000 problem in promoting or preventing mergers and acquisitions. Finally, please describe the status of the agency's industry-wide contingency and enforcement planning to mitigate Year 2000 risks.**

Systemic risk. The process for ensuring Year 2000 readiness is a dynamic one. At this stage of the remediation process, any statement regarding the probability of systemic risk resulting from the century date change would be highly uncertain. We have identified the following six major areas where Year 2000 issues may affect the banking system in the next 20 months. These are listed below, as well as our plans for addressing the concerns.

- **Testing.** Testing is critical to ensure that remediation efforts work effectively. The banking trade associations are developing an external testing program for the industry. As mentioned in the answer to question 6, the FFIEC member agencies are monitoring the efforts groups such as the Bank Administration Institute and the Mortgage Bankers Association to address concerns regarding coordination of testing.
- **Public confidence.** Educating bank customers about the Year 2000 problem will be critical to minimize customer problems, build public confidence, and avoid unnecessary public alarm that could cause serious problems for financial institutions and, ultimately, the banking public. This issue has at least two facets: What should the regulators expect their banks to disclose to their consumers and what should the bank regulators do to mitigate adverse consumer reaction to Year 2000 perceptions? Liquidity risk to the industry may increase the closer we get to the Year 2000, particularly if consumers have the perception that a crisis looms. To address these concerns, the FFIEC has:
(1) established a failure management process, which included the creation of the interagency working group on contingency and enforcement planning mentioned below, and (2) issued guidance on customer awareness. The OCC is forming an internal working group (also mentioned below) to address systemic risk issues.
- **Mergers and acquisitions.** Mergers of similarly sized, large institutions will become increasingly difficult to implement, particularly if one of the partners is behind in implementing its Year 2000 project plan. Decisions involving larger institutions will become more complex, if either institution has Year 2000 problems. The OCC's Advisory Letter (AL) 98-1, mentioned below, outlines our principal Year 2000 concerns regarding banks involved in mergers or acquisitions and how Year 2000 issues will affect corporate licensing decisions.
- **Expertise.** The industry is facing the potential of not having enough expertise to adequately remediate all Year 2000 issues. Programmers trained in legacy languages command a premium in the marketplace. Many U.S. firms are contracting with foreign

firms to obtain additional programming support, which only compounds Year 2000 problems faced by international companies. We are monitoring banks' commitment of expertise and their plans for retaining the human resources necessary to complete their Year 2000 remediation efforts.

- **Infrastructure.** Many banks are concerned that companies providing infrastructure related services (specifically, telecommunications and power suppliers) to the industry will not be ready for the Year 2000. Discussions with government regulators and other interested parties indicate that many of those providers are late in addressing Year 2000 problems and will not be ready for external testing until well into 1999. FFIEC agencies are meeting with government officials to discuss infrastructure concerns and are working with the President's Council on Year 2000 Conversion to share information on the readiness of critical segments of American industry.
- **International Progress.** Year 2000 progress internationally is mixed. We are concerned that many foreign banks and corporations have not adopted comprehensive project management processes. We are also concerned that some countries may not have the technical expertise to perform Year 2000 remediation. The OCC has appointed a senior manager to coordinate policy issues regarding international and cross-border Year 2000 issues.

Cost. Based on the information reported by national banks as of March 31, 1998, the OCC estimates that national banks will spend at least \$11.3 billion on their Year 2000 remediation efforts. These estimates are derived by multiplying the average reported cost to remediate and test systems for different size categories of OCC-supervised institutions by the number of institutions in each size category. These estimates are likely to increase as more community banks develop more formal budgets for Year 2000 expenses and as banks complete their renovation phase and begin the testing phase later this Year. Table 7.1 provides estimates for different size categories.

Table 7.1
Estimated Cost* of Year 2000 Remediation for OCC Supervised Institutions
By Asset Size
March 31, 1998
(\$ in Billions)

	<i><\$100MM</i>	<i>\$100MM to \$1B</i>	<i>Over \$1B</i>	<i>Total</i>
<i>Estimated Cost*</i>	<i>\$1.6</i>	<i>\$3.3</i>	<i>\$6.3</i>	<i>\$11.3</i>
<i>Number of OCC Supervised banks</i>	<i>1,617</i>	<i>997</i>	<i>182</i>	<i>2,796</i>

** The OCC has asked national banks to provide total estimated remediation costs, not costs to date.*
Source: OCC Year 2000 Database

Impact on mergers and acquisitions. Concerns over Year 2000 readiness are a growing factor in the mergers and acquisitions of banks. Although we are not aware of any specific case where a Year 2000 problem was the major force promoting or preventing a bank merger or acquisition, we do see signs that the cost of fixing the Year 2000 problem, combined with weaknesses in the technologies some banks use, are a growing concern for banks. Concerns over Year 2000 problems are linked with other technology issues in that technology is a key aspect of many bank business decisions. Use of technology is integral to bank operations and has been a primary force in creating new competitive opportunities for banks.

We expect Year 2000 concerns to gain greater relevance in merger decisions as the century date change approaches. For example, some banks may seek to be acquired by institutions with more advanced technology and Year 2000-ready systems as a way to preserve shareholder value and avoid operational failures. For mergers involving complementary product lines or non-overlapping geographic markets, full-scale systems integration may be delayed until after January 1, 2000, to ensure that information technology resources are not diverted from existing Year 2000 projects.

To address Year 2000 merger concerns, the OCC issued Advisory Letter (AL) 98-1 to all national banks and federal branches and agencies. This advisory letter outlines OCC supervisory expectations for banks engaged in mergers or acquisitions. In addition, we issued instructions to OCC personnel regarding procedures for processing corporate applications covered under AL-98-1. The OCC will consider Year 2000 summary ratings, systems integration plans, and a bank's track record in integrating the operations of other mergers and acquisitions with which the bank has been involved. The OCC's corporate application process includes close consultation with the OCC's supervision staff, thereby incorporating an assessment of the bank management's ability to define the overall risk inherent in any merger transaction.

Any application covered by AL 98-1 where either the applicant bank is not in compliance with the OCC's Year 2000 guidelines or where significant systems integration issues are identified on a business combination application will be subject to additional review. When a problem presents a significant supervisory concern, the OCC may impose conditions, enforceable under 12 U.S.C. § 1818, to address the concern. The OCC may deny a filing if the problems represent a significant supervisory concern.

Status of contingency and enforcement planning. The OCC recognizes that contingency planning is essential and is involved in two efforts in this area. First, the OCC is participating in an interagency working group, including representatives of the FDIC, FRB, and OTS, to determine the likely condition of a financial institution that fails to remediate its Year 2000 problems and to use that determination to assist in applying the legal grounds for appointing a receiver. The working group will also analyze information on the industry's capacity to provide data processing services to financial institutions that fail in their efforts to remediate mission-critical systems. The working group plans to complete its work by June 30, 1998.

Second, the OCC is developing contingency plans for events that may arise from problems in specific banks such as the failure to complete the remediation phase of mission-critical systems or business resumption problems. The OCC also is developing contingency plans for systemic concerns that may arise from adverse public reaction and credit and liquidity risk problems due to the failure of borrowers to make payments or wholesale depositors to deposit funds. In response to bank specific and systemic risk concerns, the OCC is establishing an internal working group to develop regulatory options for addressing bank-specific and systemic risk concerns.

8. Please assess the Year 2000 risks posed by the international financial system and what concrete progress has been made in the last quarter by foreign institutions in the area of Year 2000 remediation. Please describe what steps the agency is taking, in such areas as testing with foreign institutions and payment systems and contingency planning, to protect the US financial system from such risks.

The OCC is taking steps to ensure that we monitor and mitigate Year 2000 risks posed by the international financial system through examinations of internationally active national banks, examinations of federally licensed branches and agencies of foreign banks in the U.S., and coordinated efforts with foreign bank supervisors. We have appointed a senior manager to coordinate policy issues regarding international and cross-border banking activities and to facilitate our collection and analysis of information regarding international Year 2000 readiness.

International Year 2000 Risks: The OCC is concerned about the Year 2000 state of readiness in many banking systems around the world. While the U.S. banking industry has begun a coordinated effort to deal with the Year 2000 problem, many countries are only now beginning to understand the significance of the issue and starting to assess Year 2000 readiness of their financial institutions, clearing and payment systems, and critical infrastructure components (e.g., telecommunications, power companies).

Through the multilateral coordination efforts of bank supervisors and financial institutions (such as the Basle Committee, the Joint Year 2000 Council, and the Global 2000 Coordinating Group), Year 2000 awareness, remediation and testing efforts have picked up dramatically in recent months in the G-10 countries. However, many non-G-10 countries continue to significantly lag in terms of resources available and actions taken to deal with the Year 2000 problem.

- With the exception of a few countries (e.g., Canada, United Kingdom), most of Europe appears to lag significantly behind the U.S. in Year 2000 assessment, remediation, and testing. In addition, the conversion to the Euro in early 1999 requires changes to back office accounting systems, payment systems, automated teller machines, and point of sale terminals. The conversion to the Euro has the potential to affect numerous information systems and applications of globally active U.S. banks.
- South American, Asian, and developing countries also are significantly behind, although Year 2000 awareness and bank supervisory efforts have improved in the past few months.
- In many countries, there appears to be a significant discrepancy between Year 2000 preparations of large financial institutions and smaller institutions. This is primarily due to lack of resources at smaller institutions and the limited government focus on Year 2000 issues.

- Foreign financial institutions are still assessing the Year 2000 readiness of major foreign borrowers, counterparties, payments and clearing systems, and telecommunications and utility platforms, with testing of many critical systems not scheduled until 1999.

Examinations of Internationally Active National Banks: The OCC is working closely with internationally active national banks to ensure that they conduct proper risk assessments of their important foreign external connections and develop appropriate contingency action plans for international Year 2000 risk.

The OCC's Year 2000 supervisory guidance applies to all operations of U.S. national banks, including their international branches. Our review of national banks' Year 2000 preparations takes into account the readiness of internal systems at foreign installations as well as connections to foreign external systems. This includes foreign vendors and service providers, clearinghouses, customers, other financial institutions, and infrastructure systems such as telecommunications and utilities platforms. In addition, the OCC is assessing national banks' international lending practices to ensure that the banks are evaluating the effect that Year 2000 compliance may have on borrower creditworthiness.

The OCC and the Federal Reserve will notify the foreign parent bank and the respective foreign bank supervisor of any U.S. federal branch or agency that is rated "needs improvement" or "unsatisfactory." Such notification informs the home country parent bank of its responsibility for assuring the Year 2000 readiness of the U.S. operation. (In Question #2, we list the common deficiencies found among federal branches or agencies rated less than satisfactory in Year 2000 readiness.) The U.S. banking agencies expect that the home country supervisor will monitor the parent bank's Year 2000 compliance efforts. Neither the OCC nor the FRB have oversight authority over the parent bank's Year 2000 efforts.

Testing and Contingency Planning. As mentioned earlier in the response to previous questions, the OCC and the FFIEC agencies have issued guidance on testing and contingency planning. We expect internationally active banks and federal branches and agencies to develop and implement testing strategies and to coordinate with their international customers. We also expect them to take part in Year 2000 readiness tests conducted by international clearinghouses and exchanges.

Coordination with Foreign Bank Supervisors: The OCC is a member of the Basle Committee's Year 2000 Task Force, which formed in September 1997. In this capacity, the OCC is working with foreign supervisors to ensure that foreign banks and their supervisors are fully aware of the Year 2000 issue, and to encourage foreign bank supervisors to take more aggressive remedial action. Although financial institutions are responsible for ensuring Year 2000 readiness, we believe supervisory authorities overseeing these institutions can significantly influence the remediation efforts of institutions and, thus, reduce the potential systemic risks.

On April 28, 1998, the OCC hosted a Basle Committee Year 2000 Task Force discussion of two papers, "Year 2000 Examiner Guidance" and "Year 2000 Bank Supervisor Cross-Border

Coordination.” The Basle Committee expects to review these papers by late June 1998 and release them publicly shortly thereafter. The Task Force also is proposing to the Basle Committee that a contact list of supervisory officials responsible for Year 2000 programs be published to assist in addressing potential cross-border Year 2000 difficulties. The OCC stressed the need for coordinated testing and contingency planning at the meeting.

On April 8, 1998, the OCC participated in the BIS Year 2000 Round Table, sponsored by the Committee on Payment and Settlement Systems (CPSS), the International Organization of Securities Commissions (IOSCO), and the International Association of Insurance Supervisors (IAIS). Representatives of the U.S. and foreign governments as well as the banking, securities, and insurance industries from a number of countries discussed progress in Year 2000 readiness. A major development from the Year 2000 Round Table was the creation of the Global 2000 Coordinating Group and the Joint Year 2000 Council.

- The Global 2000 Coordinating Group will include representatives from financial services firms that are located in and operate across multiple markets (including banking, securities, and insurance markets) and jurisdictions. The Group will focus on the Year 2000 readiness of trading, settlement, and payment systems and will coordinate testing schedules in key markets. In addition, the Group will provide guidance on minimum standards for the design and management of Year 2000 testing and share information on risk assessment, testing status, and Year 2000 readiness in different markets.
- The Joint Year 2000 Council will be a parallel group of regulatory authorities comprised of the conference’s sponsoring organizations. It will share information on regulatory and supervisory strategies, discuss possible contingency measures, and establish contacts with national and international private sector initiatives.

To a large extent, the U.S. banking agencies must rely on foreign governments and private businesses abroad to achieve Year 2000 compliance worldwide. No matter how well banks and their supervisors prepare for the century date change, we cannot eliminate the risk that a large foreign bank or borrower may find itself in trouble due to Year 2000 problems. Therefore, the OCC is closely monitoring the level of exposure national banks have to foreign banks and borrowers through our examination process at internationally active U.S. banks.